5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS OF THE ENVIRONMENTAL ANALYSIS

The conclusions and recommendations presented in this section are those of the FERC environmental staff. Our conclusions and recommendations were developed with input from the NPS, EPA, USACE, NOAA Fisheries, and the City of New York as cooperating agencies. The federal cooperating agencies could adopt this EIS per 40 CFR 1506.13 if, after an independent review of the document, they conclude that their permitting requirements and/or regulatory responsibilities have been satisfied. These agencies would present their own conclusions and recommendations in their respective and applicable decisions.

We determined that construction and operation of the Projects would result in limited adverse environmental impacts, which would mostly occur during construction. As part of our review, we developed specific mitigation measures we believe would appropriately and reasonably reduce the environmental impacts resulting from construction and operation of the Projects. We believe that environmental impacts would be reduced to less than significant levels if the Projects are constructed and operated in accordance with applicable laws and regulations, Transco's proposed mitigation, and our recommendations. Therefore, we are recommending that our mitigation measures be attached as conditions to any authorization issued by the Commission. A summary of the anticipated impacts from the Projects and our conclusions regarding impacts are provided by resource area below.

5.1.1 Geology

The overall effect of the Projects on topography and geology would be minor. The primary impacts would be associated with onshore grading and excavation activities and with offshore dredging and jetting. Following construction, the onshore workspaces on the Rockaway Peninsula and at Compressor Station 195 (with the exception of areas covered by new structures) would be returned to pre-construction conditions. At the M&R facility, the areas affected by excavations would be paved or covered in gravel.

Utilization of the HDD method would eliminate impacts on existing geologic conditions between the HDD entry and exit points for the Rockaway Delivery Lateral, including the shoreline crossing at Rockaway Beach and Jacob Riis Park within the GNRA. To minimize the potential for cave-ins and running sand conditions along the drill hole during construction, Transco would install a large diameter casing at the onshore entry site and excavate a subsea pit at the offshore exit site. Transco would utilize drilling fluid (primarily bentonite and water) to lubricate the drill head and remove cuttings from the drill hole. Additionally, a drilling fluid engineer would be present throughout the HDD activities to monitor and manipulate the weight and viscosity of the drilling fluid. While these measures would reduce the risks associated with the proposed HDD, there are unresolved questions about the feasibility of the technique at this location. A more in depth review of Transco's geotechnical report (provided in Appendix J) by a qualified HDD engineer would provide a greater level of certainty and/or result in additional measures to aid in a successful crossing. Therefore, we are recommending in Section 4.1.7 that prior to the end of the draft EIS comment period, Transco should have an experienced HDD engineer evaluate subsurface conditions along the HDD route to confirm the feasibility of Transco's proposed HDD crossing methodology.

Transco initially proposed to allow the offshore excavation areas to infill by natural sedimentation processes, but modified its proposed action to an active backfill in response to comments from cooperating and other agencies. Transco would configure the discharge nozzles on the jet sled to expel sediment behind the sled and into the trench to provide for immediate backfill as the pipeline is

lowered beneath the seabed. Following installation of the pipeline, Transco would conduct a bathymetric survey to document seafloor elevations along the pipe trench as well as other offshore excavation areas. If the survey identifies any areas where the seafloor has not been restored and/or where 4 feet of cover is not present over the pipeline, Transco would backfill these areas using sediments obtained from the seafloor with a suction dredge in the area immediately adjacent to the trench. Transco additionally would add a top layer of native sediments over the drilling fluid and cuttings that collect within the offshore HDD exit pit.

No active mines or mineral resources are located within 1 mile of the proposed Rockaway Project facilities or within 0.5 mile of Compressor Station 195. Therefore, the Projects would not affect mineral resources.

The geologic units underlying the Rockaway Project area consist of Wisconsin glacial deposits and Holocene beach and near-shore unconsolidated sediments that are continuously worked by wave action. The near-surface deposits at Compressor Station 195 consist of soils formed in residuum from metamorphic rock with a depth to bedrock greater than 60 inches. The probability of encountering significant paleontological resources in either of these areas is low.

Seismic hazards, soil liquefaction, and karst terrain/sinkholes are unlikely to impact the proposed facilities for the Projects. Although the probability of a hurricane making landfall in Kings and Queens Counties, New York is low in any given year (0.2 percent), the probability of these counties experiencing hurricane-force winds within a 50-year period is high (86 percent). It is unlikely that the Rockaway Delivery Lateral would be affected by a hurricane, particularly at the shoreline crossing where it would be installed at a depth of about 100 feet below ground level, but the M&R facility could be impacted by winds or flooding associated with a major storm. Hurricanes are not identified as a hazard for Compressor Station 195, which is located about 115 miles inland.

To minimize impacts from a hurricane or flooding, Transco would construct the M&R facility in compliance with all applicable City of New York building codes, which were updated in 2008 to acknowledge that the city is in a "hurricane prone region." These codes include design requirements to ensure the integrity of new construction under extreme weather conditions. Additionally, in response to hurricane forecasts, Transco could shut off valves and electrical systems and secure the facility prior to a major storm making landfall.

5.1.2 Soils

The primary soil and sediment disturbances associated with the Projects would occur at the onshore workspace for the HDD entry point and tie-in to the National Grid pipeline; along the offshore pipeline segment from the HDD exit point to the tie-in with the LNYBL; and at Compressor Station 195. Transco would implement the mitigation measures contained in its Plan for the Rockaway Project and the FERC Plan for the Northeast Connector Project to minimize onshore impacts on soil resources. Transco's Plan is based on the FERC Plan, which specifies measures for segregating topsoil, controlling erosion and sedimentation, and restoring disturbed areas following construction. We find Transco's Plan to be acceptable.

Transco developed and would implement the measures in its SPCC Plan and Construction Spill Plans to minimize the potential for spills and leaks of hazardous materials to occur during construction. These plans identify and describe procedures for preventing and responding to spills and leaks, including clean-up of affected soils. We find these plans to be acceptable for addressing spills and leaks that occur on land.

No known soil contamination sites were identified within 0.5 mile of the Projects. Based on the urban nature of the Rockaway Project area, it is possible that previously unidentified areas of contaminated soil could be encountered during construction. If this occurs, Transco would implement its *Unanticipated Discovery of Contamination Plan*, which outlines measures for the proper handling and disposal of contaminated media. We find this plan to be acceptable. We also note that the NYCDEP recommends that Transco develop a *Construction Health and Safety Plan* for construction activities in areas where humans would be exposed to disturbed soils.

5.1.3 Water Resources

Groundwater

The Rockaway Project is located within the Long Island aquifer system, which underlies all of Kings and Queens Counties, New York. This system is not currently used in New York City as a public source of drinking water, but a number of developments are being implemented as part of the Water for the Future Program to supplement the city's water supply, including reactivating the groundwater supply system in southeastern Queens County. The recharge zone for this system, which includes all of Kings and Queens Counties, is designated as the Brooklyn Queens SSA. Compressor Station 195 is located above the Piedmont and Blue Ridge Crystalline Rock Aquifer, which is not classified as a SSA.

The closest wells to the Rockaway Project are located approximately 3.0 miles to the northwest. These wells, which are associated with New York City's Groundwater System, would not be affected by construction. An active water well providing Compressor Station 195 with potable water is located within the station yard. Additionally, one well that provides potable water to an adjacent residence is located within 20 feet of the station boundary. Impacts on these wells are not expected because blasting would not be required and Transco would implement its SPCC Plan to prevent or cleanup spills or leaks of hazardous materials during construction. As noted above, we find Transco's SPCC Plan to be adequate for addressing spills and leaks that occur on land.

Groundwater may be encountered during installation of the HDD segment of the Rockaway Delivery Lateral, but construction is not expected to result in any adverse impacts on groundwater. Groundwater resources at Compressor Station 195 are unlikely to be directly affected by construction activities because the groundwater occurs at depths greater than the proposed limits of excavation. Perched or near surface groundwater, if present, could be affected by soil disturbing activities and/or trench dewatering. These impacts would be minimized or avoided through implementation of the FERC Plan as well as any applicable state permits for dewatering.

Groundwater resources in the vicinity of Compressor Station 195 and the onshore construction areas associated with the Rockaway Project could be vulnerable to contamination if there is an inadvertent surface spill of hazardous materials during construction. Transco would implement the measures identified in its SPCC Plan and its Construction Spill Plans to minimize the potential for groundwater impacts associated with an inadvertent spill. As indicated above, we find these plans to be adequate for addressing spills or leaks that occur on land. In addition, Transco would implement its *Unanticipated Discovery of Contamination Plan*, which outlines measures for the proper handling and disposal of contaminated groundwater that may be encountered during the Rockaway Project. We find this plan to be acceptable.

Surface Waters

The only surface water that would be affected by the Projects is the Atlantic Ocean. No surface waters are present within the proposed workspaces associated with the onshore pipeline, M&R facility, pipe storage yard, or Compressor Station 195.

Offshore excavations for the pipeline and anode bed (i.e., post-lay jetting, hand jetting, and dredging) would impact ocean waters by disturbing bottom sediment resulting in increased turbidity and suspended solids. In general, these effects would be localized and of short duration. Transco used an ECOM to evaluate the duration and extent of the anticipated turbidity and suspended solids from offshore construction activities. The modeling results indicate that the areas closest to the excavations would be subject to the highest levels of sedimentation, with the depth of the redeposited sediments diminishing as the distance from the jetting and dredging operations increase. The modeling predicts that the effects of post-lay jetting would be greater than hand jetting and dredging, which would occur on a much smaller scale. Sediment accumulations up to 18.4 inches near the trench, up to 1.2 inches within 1,500 feet of the trench, and up to 0.4 inch within 0.5 mile of the trench would result from the worst-case, fastest post-lay jet trenching rate.

The remainder of the offshore pipeline, including the crossing of the shoreline, would be installed by HDD. Dredging activities associated with the HDD exit pit would have similar turbidity and sedimentation impacts to those discussed above for jetting. Because the HDD exit hole would be located in the ocean, the drilling operation would result in a planned release of drilling fluid into the offshore exit pit. The drilling fluids are expected to remain within the HDD exit pit and are not expected to cause a significant amount of turbidity. Impacts outside the pit could occur in the event of an inadvertent release of drilling fluid. Transco would implement measures outlined in its HDD Monitoring and Contingency Plan to minimize the risk of HDD complications and the potential for inadvertent releases of drilling fluid outside the exit pit. We find this plan to be acceptable.

Transco would hydrostatically test the HDD pipeline segment before and after installation and would hydrostatically test the entire pipeline before it is placed in service. Transco would use about 5,200 gallons of fresh water and 573,500 gallons of seawater for these tests. The fresh water would be obtained from municipal sources. The seawater would be sucked into a submersible pump placed about 20 feet below the ocean surface. The seawater would be filtered by a mesh screen on the intake to prevent debris and foreign material from getting into the pipeline. An oxygen scavenger and non-oxidizing biocide would be added to the sea water to prevent corrosion of the pipeline, and a florescent dye would be added to help detect potential leaks. Following each test, the water would be pumped into a diffuser to re-oxygenate and disperse (dilute) the water as it is discharged to the marine environment.

Another 82,000 gallons of water would be used to hydrostatically test components installed at the M&R facility. This water would be obtained from a local municipal source or trucked to the site from another municipality. In Section 4.3.2.3, we are recommending that prior to construction, Transco should consult with NYCDEP staff to address agency concerns regarding flow rates for withdrawals of municipal water from fire hydrants. Following testing, the test water would be discharged into the existing stormwater drainage system that runs under the hangars on NPS property.

Approximately 46,000 gallons of water would be required for hydrostatic testing of the piping modifications at Compressor Station 195. Transco would obtain this water from the onsite potable water well and discharge it to an upland area within the station site in accordance with applicable state permits.

Accidental spills and leaks of hazardous materials associated with barges and other vessels (e.g., fuel or oil) could result in a degradation of water quality and/or impacts on wildlife and aquatic resources.

Transco stated in its SPCC Plan that emergency response procedures for offshore spills would be identified after a contractor has been selected. We are recommending in Section 4.3.2.3 that prior to construction, Transco should update its SPCC Plan for the Rockaway Project to include specific measures that would be implemented to identify, control, and clean up any accidental leaks or spills from offshore construction vessels.

Operation of the Rockaway Project periodically would impact water quality in the vicinity of the interconnection between the Rockaway Delivery Lateral and the LNYBL. Transco plans to perform periodic maintenance activities in accordance with 49 CFR 192 that would include accessing the buried subsea manifold approximately once every 7 years to install a removable launcher and conduct an internal inspection of the pipeline. The subsea manifold would be exposed using the hand-jetting method, displacing approximately 2,000 cubic yards of sediments. This would be approximately 16 percent of the sediments displaced during the initial hot-tap installation. The displaced sediments are expected to settle in a similar pattern but not extend as far from the area disturbed by construction.

Wetland Resources

The proposed Rockaway Delivery Lateral crosses one wetland area that is classified by the NYSDEC as a littoral, tidal wetland and by the National Wetland Inventory as a marine, intertidal unconsolidated shore. Transco is proposing to cross under this area using the HDD construction method. This method would avoid direct impacts on the wetland during construction. The potential impacts on the wetland would be from an inadvertent release of drilling fluid during the HDD. Because the drill path would be approximately 100 feet below grade when it crosses under the wetland, the likelihood of an inadvertent return reaching the surface is low. No wetlands are present at the proposed M&R facility, pipe yard, or Compressor Station 195.

5.1.4 Vegetation

Offshore activities associated with construction of the Rockaway Delivery Lateral could impact small amounts of turf algae if man-made structures are moved or buried during trenching operations or as a result of vessel anchoring. These effects would be minor and short-lived because the sandy sediments disturbed by construction would settle quickly, and the sediment accumulations caused by trenching would be minor.

The maintained area at the HDD entry workspace is the primary place where terrestrial vegetation would be impacted by construction of the pipeline. Assuming this area is vegetated at the time of construction, Transco would temporarily disturb about 0.7 acre of grass. Following construction, the workspace would be reseeded using a seed mix approved by the TBTA.

An additional 0.7 acre of vegetation within the GNRA, mostly on the golf course but also on the maritime beach, could potentially be disturbed by foot traffic to install the tracking wires for the HDD. Transco plans to coordinate with the NPS and provide a biological monitor during installation of the tracking wires to avoid impacts on sensitive species, including plants such as seabeach amaranth and seabeach knotweed. Additionally, we added a recommendation in Section 4.7.1.6 that Transco should consult with the NPS to identify a protocol for coordinated monitoring of the drill path in the GNRA for the presence of sensitive species, including plants.

Construction of the M&R facility would remove approximately 1.9 acres of herbaceous vegetation growing on, in, and around the broken pavement surrounding the hangar complex at Floyd Bennett Field. These areas would be paved over following completion of the M&R facility, though the

NPS has indicated that some areas around the perimeter of the site may need reseeding based on existing conditions.

Construction activities at Compressor Station 195 would disturb 25.2 acres of developed/maintained land and would require the removal of approximately 25 to 27 trees within hedgerows at the site. Transco would implement the measures in the FERC Plan to minimize impacts on vegetation at the site. Following construction, disturbed areas at the site that do not include new permanent facilities would be restored and reseeded using an appropriate seed mix.

5.1.5 Wildlife and Aquatic Resources

The wildlife habitats that would be crossed by or close to the Rockaway Project include offshore sandy bottoms and artificial hard-bottom reef structures and onshore maritime beach, scrub/shrub, maintained, and artificial surfaces with herbaceous vegetation. The proposed Rockaway Delivery Lateral would cross approximately 0.15 mile of onshore and offshore areas that have been identified by the FWS as significant land or water habitat complexes. Direct impacts on these complexes would be avoided by the HDD. The M&R facility is located in an area that the FWS has identified as a significant land habitat complex, but the area that would be affected is developed and mostly paved. Compressor Station 195 is located on developed/maintained lands. No significant or sensitive wildlife habitat areas are located within this site.

The impact of the Projects on wildlife species and their habitats would vary depending on the life history of each species and the habitats present in construction areas. More mobile species would temporarily be displaced from workspace and surrounding areas to similar nearby habitat during construction. Some displaced wildlife would return to the newly disturbed areas and adjacent, undisturbed habitats after completion of construction. Less mobile species, such as benthic organisms in the offshore construction area, may experience direct mortality or permanent displacement.

Marine Wildlife

Offshore construction activities with the greatest potential to affect marine wildlife include dredging and jetting, vessel anchoring, pile driving, the HDD, accidental spills of construction-related fluids (e.g., oil, gasoline, or hydraulic fluids), withdrawal and discharge of hydrostatic test water, and construction-related vessel traffic.

In the vicinity of the construction area, aquatic species could be impacted directly by the excavations and anchoring of vessels, or indirectly by the disturbance of sediments, including the suspension of sediments in the water column and the re-deposition of sediments that fall onto the seabed. The effects of sedimentation would be temporary and localized. The areas disturbed by excavation and sedimentation would be recolonized by invertebrates. Initial recolonization of benthic invertebrates is expected to occur within 1 year after the disturbance, though the establishment of successional communities of species resembling pre-trenching populations may take several years. No significant long-term impacts on benthic species are expected from the excavation activities.

The noise associated with the installation of 70 piles to support the HDD installation has the potential to affect marine wildlife. Our analysis indicates that noise from pile driving would not exceed the injury thresholds for marine mammals and sea turtles at any distance from a pile driving activity. The noise would exceed the injury threshold for fish within distances from the pile of 7.1 feet for fish weighing 2 grams or more and 13.1 feet for fish weighing less than 2 grams. The analysis suggests that sea turtle behavior could be affected by pile driving at a distance from the pile of 13.1 feet, and fish behavior could be affected by pile driving at a distance from the pile of 151 feet. The area encompassed

by the behavior disturbance threshold for marine mammals is more expansive and would extend up to 2.86 miles from pile driving activities.

Transco anticipates that approximately 12,000 to 15,000 cubic yards of drilling fluid and cuttings would be released at the offshore HDD exit location. This material would collect within the pit excavated at the exit site. To minimize the potential for toxic impacts on marine wildlife, Transco proposes to use a water-based drilling fluid with non-toxic additives as opposed to oil-based or synthetic-based mud systems. The combined initial concentrations of bentonite and other additives would likely be below 10 percent of the total volume of the drilling fluid. A discussion of the ecotoxicity of the drilling fluid is provided in Section 5.1.6 below.

Inadvertent releases of drilling fluid outside of the HDD exit pit are possible but not expected. Transco would monitor the HDD operation for inadvertent releases by checking the pressure and volume of drilling fluid returns. Transco has not identified any formal monitoring procedures for the area between the shore and the exit pit but stated that inspection personnel on construction vessels would visually inspect the area at least twice daily. Corrective measures would be identified by Transco and its drilling contractor based on site-specific conditions at the time of the release. Transco would stop the drilling activity if the volume of inadvertent drilling fluid returns creates a threat to public health and safety or if an inspection/evaluation is needed to determine if mitigation measures, including the use of additional additives, are necessary to maintain the integrity of the drill hole. Transco has prepared an HDD Monitoring and Contingency Plan that describes the measures that would be implemented to prevent, identify, and clean-up inadvertent releases of drilling mud. We find this plan to be acceptable.

During the process of withdrawing water from the marine environment for hydrostatic testing, organisms that can physically fit through the mesh on the intake screen could become entrained in the pipeline, and larger organisms could be impinged on the screen. Entrained and impinged organisms would perish. Marine organisms also could be harmed if exposed to high concentrations of the oxygen scavenger and biocide that would be added to the test water to prevent corrosion, but neither of these effects is expected to be significant. Transco would use a diffuser during discharge to re-oxygenate the water and disperse (dilute) the concentrations of the scavenger and biocide at a rate of 15:1 as they are released to the marine environment. Additionally, the discharges would be subject to any requirements identified in applicable permits, such as the NYSDEC's hydrostatic test water permit, including any requirements associated with discharge of the scavenger, biocide, and dye.

Offshore construction vessels would be expected to comply with USCG requirements for the prevention and control of oil and fuel spills and would be required to register for the EPA NPDES Vessel General Permit, which includes measures to protect against impacts associated with discharges incidental to the operations of commercial vessels. As indicated above, we are recommending in Section 4.3.2.3 that Transco update its SPCC Plan for the Rockaway Project to include specific measures that would be implemented to identify, control, and clean up any accidental leaks or spills from offshore vessels. Transco would also adhere to the USCG marine trash policy. These measures collectively would protect marine life from the potential for and impacts of trash, debris, and hazardous spills.

Potential impacts associated with vessel activities would include the possibility of vessels striking fish, turtles, or marine mammals, and noise associated with the operation of the vessels. In general, the potential for vessel strikes is low due to the limited offshore traffic and the depth of water in the offshore construction area. Underwater noise associated with vessels is expected to be similar to noise generated by existing heavy vessel traffic in the New York Bight. As such, we do not expect that the small number of vessels associated with the Rockaway Project would have any significant effect on the existing underwater noise environment in the vicinity of the pipeline.

Transco would not actively maintain the seafloor in the offshore right-of-way. During operation, Transco would need to access the subsea manifold approximately once every 7 years to install a temporary launcher and conduct an internal inspection of the pipeline. The impacts associated with maintenance activities would be similar to construction impacts, but on a much smaller scale. The maintenance activities would result in minor, temporary impacts on the benthic habitat at and around the subsea manifold. No significant adverse effects on benthic habitat are expected from pipeline operation or maintenance activities.

Marine Mammals

Although there is no specific marine mammal foraging habitat in the vicinity of the Rockaway Delivery Lateral, there is the potential for six marine mammal species (gray seal, harbor seal, harp seal, short-beaked common dolphin, harbor porpoise, and right whale) to occur in the area during construction. Our analysis regarding effects on marine wildlife as discussed above would also apply to marine mammals and their prey. The activity with the greatest potential effect on marine mammals would be the pile driving, which could generate noise that may not be masked by existing background vessels or ambient noise. It would take about 60 seconds of continuous driving to install (and remove) each individual pile, and Transco estimates that all piles would be installed (and removed) over a period of approximately 1 week.

Transco is consulting with NOAA Fisheries and recently submitted an application for an IHA for Level B harassment of the six marine mammal species with the greatest potential to occur in the offshore construction area. As part of its request, Transco proposed several mitigation/monitoring procedures to minimize impacts on marine mammals resulting from pile driving. These include use of soft-start procedures for the vibratory hammer, monitoring the area within 3.0 miles of pile driving for behavioral impacts on marine mammals, and shutdown procedures if abnormal behaviors are observed in a marine mammal in the monitoring area. We have reviewed Transco's proposed mitigation measures, but we have not completed our consultations with NOAA Fisheries regarding impacts on marine mammals. Therefore, we are recommending in Section 4.5.2.2 that Transco should not begin offshore construction activities until FERC staff receives comments from NOAA Fisheries, and NOAA Fisheries has issued an IHA to Transco.

Terrestrial Wildlife

Transco proposes to utilize the HDD construction method for a majority of the onshore portion of the pipeline. As a result, no temporary or long-term impacts on federally and state-designated significant habitats are anticipated. The HDD would cross under Rockaway Beach and Jacob Riis Park and would not impact the ground surface within the GNRA, except by foot traffic to lay tracking wires and monitor the drill path drilling HDD operations. The tracking wires and foot traffic are not expected to affect terrestrial wildlife or their habitats. Additionally, as indicated above, we are recommending in Section 4.7.1.6 that prior to the end of the draft EIS comment period, Transco consult with the NPS to identify a protocol for coordinated monitoring of the drill path for the presence of sensitive species.

The sole onshore area that would be impacted by pipeline construction is the HDD entry workspace and tie-in to the National Grid pipeline north of Jacob Riis Park. The HDD operations at this site would disturb less than an acre of grass in an area that is routinely mowed by the TBTA. This area provides marginal habitat for wildlife and would be restored after construction in accordance with Transco's Plan. As noted above, we find Transco's Plan to be acceptable. During operation, Transco would not actively maintain the onshore right-of-way, and the land within the GNRA would continue to be managed for existing uses by the NPS.

The M&R facility would be constructed within an existing airplane hangar complex at Floyd Bennett Field and would utilize temporary workspace in adjacent paved areas. These areas provide marginal habitat for terrestrial wildlife species. Construction activities at the M&R facility (e.g., noise) would likely have a minor and temporary effect on nearby wildlife species. Because the proposed facilities would be located within the hangar complex, post-construction operation and maintenance activities are not expected to have any significant impacts on surrounding wildlife.

Activities at Compressor Station 195 would occur within the existing station yard, which provides marginal habitat for wildlife. Therefore, construction, operation, and maintenance activities associated with the Northeast Connector Project would have a minor and temporary effect on wildlife species at this site.

Migratory Birds

Potential impacts on migratory birds would be minimized by Transco's route, site, and workspace selections for the Projects, which avoid wooded, scrub/shrub, or natural grass habitats. While waterbirds use the shorelines of the Rockaway Peninsula for foraging and cover, Transco's use of the HDD method to install the Rockaway Delivery Lateral under the beach would avoid or minimize impacts on birds in this area. We believe these measures would minimize the effects of the Projects on migratory birds.

5.1.6 Fisheries and Aquatic Resources

The offshore segment of Transco's proposed pipeline is located in a marine area that supports EFH for 21 species, diadramous and marine fisheries, and a number of fish and shellfish species with ecological, commercial, or recreational importance. Our analysis regarding the effects of pipeline construction on marine wildlife as discussed above would also apply to EFH and fisheries resources. These include impacts associated with vessel anchoring, pile driving, the HDD, accidental leaks or spills of hazardous materials, withdrawal and discharge of hydrostatic test water, and construction vessel traffic.

Construction of the offshore pipeline would directly disturb approximately 38.0 acres of seabed due to dredging and jetting. Benthic species in these areas most likely would perish. Dredging and jetting additionally would create turbidity plumes in the water column that could clog fish gills, obscure visual stimuli, and reduce food intake for benthic filter feeders. Some demersal fish that are adapted to higher turbidity environments could be drawn to the sediment-generating activities, but most juvenile and adult pelagic fish would likely swim away from the plumes. Turbidity and suspended sediment concentrations could impact bivalves (e.g., surfclams) and other benthic organisms by causing suffocation. It is estimated that up to 402 acres of seabed could be affected by sedimentation.

Transco's ECOM indicates that the duration of the turbidity plumes would be short-lived (e.g., no more than 4.5 hours following jet sled trenching) with the depth of sedimentation decreasing with further distance from the trench. Based on historical data and a study conducted by Transco and reviewed by FERC staff, sediments along the pipeline route do not contain contaminants that exceed NYSDEC TOGS thresholds (with the exception of one near-surface sample), so impacts associated with suspension and re-deposition of contaminated sediments are not expected.

Transco would mitigate for any short-term loss of surfclams due to sedimentation by coordinating with the New York surfclam fishing community to see if it is possible to harvest in the vicinity of the proposed pipeline in the months immediately prior to construction. Transco additionally would conduct monitoring during construction and would adjust activities (e.g., reducing the speed of the jet sled) to reduce excessive turbidity. These measures would decrease the detrimental effects of turbidity and

sedimentation. As a result, it is expected that the benthos in the affected areas would recover quickly through recruitment and other processes.

As indicated above, Transco proposes to excavate a pit at the offshore HDD exit site to collect and contain anticipated releases of drilling fluid and cuttings during the HDD operation. Based on the cohesive properties of the bentonite mixture in seawater, the drilling fluid is expected to settle out and remain stable at the bottom of the pit. According to Transco, the drilling fluid would consist of a water-based mud containing bentonite and associated additives that are not expected to create acutely toxic conditions for benthic fauna, but Transco has not identified the specific additives that would be used. Therefore, we are recommending in Section 4.6.3.2 that prior to the end of the draft EIS comment period, Transco should file an assessment identifying the specific additives that would be used in the HDD drilling fluid, the material safety data sheets for each additive, the concentration and dilution rates for each additive, an evaluation of the toxicity of each additive, and an evaluation of the potential for bioaccumulation of each additive in the food chain.

As noted above, Transco would configure the discharge nozzles on the jet sled to expel sediment behind the sled and into the trench to provide for immediate backfill as the pipeline is lowered beneath the seabed. Following installation of the pipeline, Transco would conduct a bathymetric survey to document seafloor elevations along the pipe trench as well as other offshore excavation areas. If the survey identifies any areas where the seafloor has not been restored and/or where 4 feet of cover is not present over the pipeline, Transco would backfill these areas using sediments obtained from the seafloor with a suction dredge. Transco additionally would add a top layer of native and/or compatible sediments over the drilling fluid and cuttings that collect within the offshore HDD exit pit. As a result, there would be no permanent impact on the contours of the seafloor as a result of pipeline construction.

Transco's sediment modeling analysis did not address turbidity and sedimentation impacts due to operation of the suction dredge during backfilling nor did it account for configuring the discharge nozzles on the jet sled to discharge sediment back to the trench. Therefore, we are recommending in Section 4.6.3.2 that prior to the end of the draft EIS comment period, Transco should file a revised sediment modeling analysis to estimate water quality impacts associated with operation of the suction dredge and to account for the effect of redirecting the discharge nozzles to expel sediment back into the trench.

5.1.7 Special Status Species

Special status species are those for which federal or state agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed species classified as threatened or endangered; species considered as candidates or petitioned for federal listing by the FWS or NOAA Fisheries; and species that are designated as state-listed or receive special management considerations. Impacts on special status species would be similar to those described above for terrestrial and marine wildlife.

For the Rockaway Project, we consulted (either directly or indirectly through Transco) with the FWS, NOAA Fisheries, and state resource agencies regarding the presence of federally listed or proposed species in the construction areas. Based on these consultations and our own analyses, we have determined that construction and operation of the Rockaway Project would have *no effect* on fin whale, humpback whale, and shortnose sturgeon; *may affect, but would not likely adversely affect* leatherback sea turtle, Kemp's ridley sea turtle, green sea turtle, loggerhead sea turtle, roseate tern, piping plover, and seabeach amaranth; and *may affect, and is likely to adversely affect* right whale and Atlantic sturgeon. We are requesting that the FWS and NOAA Fisheries consider this draft EIS as the BA for the Rockaway Project. Consequently, we are recommending in Section 4.7.4 that Transco not begin construction

activities for the Rockaway Project until we complete our consultations with the FWS and NOAA Fisheries.

For the Northeast Connector Project, federally listed threatened and endangered species that may occur in the vicinity of Compressor Stations 195, 205, and 207 include the Indiana bat, bog turtle, and swamp pink. Activities at Compressor Stations 205 and 207 and activities within the existing fenceline at Compressor Station 195 are covered by agreements between Transco and the FWS, which exempt modifications of existing Transco facilities from further review for impacts on federally listed species. In correspondence with Transco, the FWS-PFO concluded that the proposed construction activities outside the existing fenceline at Compressor Station 195 would not adversely affect the bog turtle. Based on these agreements and correspondence, we have determined that the Northeast Connector Project *may affect, but would not likely adversely affect* Indiana bat, and would have *no effect* on bog turtle and swamp pink. No further consultation for these determinations is required.

In addition to the federally listed species, a number of state-listed species could occur in the vicinity of the Project areas in New York, New Jersey, and Pennsylvania. Given the nature of these species and the measures that would be implemented by Transco, we believe that impacts on state-listed species would be adequately avoided or minimized.

We received a comment from the NPS that staff from the Natural Resource Management Division at the GNRA should accompany Transco during pedestrian monitoring of the drill path between the months of March and September to ensure that impacts on piping plovers or any other sensitive species (such as seabeach amaranth and seabeach knotweed) are avoided. Therefore, we are recommending in Section 4.7.1.6 that prior to construction, Transco should consult with the NPS to identify a protocol for coordinated monitoring of the drill path.

5.1.8 Land Use and Visual Resources

Construction of the Rockaway Project would impact approximately 20.1 acres of land and 1,546.9 acres of marine areas. Following construction, lands within the pipeline right-of-way, facility workspace, pipe yard, and temporary access roads would be allowed to revert to their pre-construction land uses and cover types. Operation of the Rockaway Project facilities would permanently encumber 71.5 acres, including approximately 69.5 acres for the new permanent rights-of-way for the pipeline and cathodic protection system and 2.0 acres for the M&R facility.

Construction activities at Compressor Station 195 would affect 25.2 acres of developed/maintained land within the existing station site. Following construction, disturbed areas that do not include new permanent facilities would be restored to pre-construction land uses and cover types. The entire area within Compressor Station 195 would continue to be used for natural gas transmission service during the operation phase of the Northeast Connector Project.

There are no residences within 50 feet of the proposed construction areas for the Rockaway Project; the nearest residential community is approximately 0.3 mile to the west. In addition, other than rehabilitation and reuse of Hangars 1 and 2 for the M&R facility, no buildings would be affected by the Rockaway Project.

Construction activities at Compressor Station 195 would be confined to the existing station yard. There are no residences within 50 feet of the proposed construction workspace, but there are several homes in the vicinity of the Compressor Station 195 that would experience an increase in noise during construction. Transco's proposal to replace three gas-fired compressors with two new electric motor

drives would result in a slight reduction in ambient noise conditions in the vicinity of Compressor Station 195 during operations.

The Rockaway Project is subject to a federal Coastal Zone Consistency Review. Transco consulted with the NYSDOS for review of the Rockaway Project under New York State CMP and LWRP policies. Transco determined that the Rockaway Project would not have a significant adverse impact on coastal resources and would be consistent with the applicable policies of the LWRP. The NYSDOS is expected to complete its review of Transco's consistency assessment in December of 2013. Therefore, we are recommending in Section 4.8.3 that prior to construction, Transco should file the NYSDOS determination of the Rockaway Project's consistency with the New York State CMP under the applicable provisions of the CZMA.

Approximately 81.5 percent of the proposed pipeline would be located offshore on submerged lands owned by New York State. The remainder of the pipeline would be constructed beneath federal lands, both onshore and offshore, administered by the NPS (17.9 percent) and on land owned by the TBTA (0.6 percent). The M&R facility would be constructed on NPS lands at Floyd Bennett Field. In addition, Transco is proposing to lease a privately owned 5.0-acre commercial site in Elizabeth, New Jersey for a pipe yard.

The NPS lands that would be affected by the Rockaway Project are associated with the GNRA. The proposed pipeline would cross 0.57 mile of land and offshore areas within GNRA boundaries. Of this, 0.32 mile would be located within Jacob Riis Park. Impacts on the park would be minimized by Transco's use of the HDD construction method. No construction activities would occur in the park except for foot traffic to place and monitor the HDD tracking wires. It is possible that use of the golf course at the park could decline for a temporary, short-term period during the spring of 2014 as a result of construction noise, but Transco would erect tents and/or screens around the HDD machinery to help mitigate this effect.

Transco has proposed a permanent 50-foot-wide right-of-way over the pipeline across Jacob Riis Park, Rockaway Beach, and the offshore area under the GNRA. During operations, Transco would periodically walk and inspect the onshore right-of-way and conduct leak detection surveys once a year, but no alterations would be made to the land cover during these inspections. Additionally, there would be no restrictions on existing uses of the park along the right-of-way. Therefore, the Rockaway Project would have no impact on current land uses or cover types within Jacob Riis Park.

Within Floyd Bennett Field, the M&R facility would be constructed within a 1.1-acre historic hangar complex following rehabilitation of the structures. The complex most recently was used as a storage area for supplies and equipment and by emergency response teams after Hurricane Sandy, but the hangars are in disrepair. Access to the hangar complex has been restricted by the NPS due to safety concerns, so construction activities would not impact any current uses of the structures. Operation of the M&R facility would require the use of approximately 2.0 acres of land, including the lease of the hangar complex and the establishment of two permanent right-of-way easements for the inlet and outlet piping that would connect the facility to the National Grid pipelines along Flatbush Avenue. GNRA traffic would not be impacted by operation of the M&R facility.

There are a number of managed honey bee colonies on Floyd Bennett Field. Members of the public have expressed concern that the noise and vibrations caused by operation of the M&R facility could disturb these colonies. Transco conducted a study to assess the potential effects of vibration during operations at the M&R facility. The analysis indicates that operation of the proposed M&R facility would have no effect on the honey bee colonies, which are located about 270 feet to the east of the hangar complex.

No significant or long-term impacts on surfclam harvests or fish populations available for commercial harvest or recreational catch are expected. Transco would advertise its plans and schedule to allow commercial fishermen to remove any fixed fishing gear from the construction area before construction begins. In addition, as noted above, Transco would work with the local fishing community to coordinate a surfclam harvest in the offshore work area in the months prior to construction. Vessels not associated with the Rockaway Project would be advised to avoid the offshore workspace during construction, but there would be no permanent or long-term restrictions on fishing in this area.

The Rockaway Project is expected to have little, if any, impact on commercial shipping. In addition, recreational boat traffic in the vicinity of the offshore pipeline during construction is expected to be minor because there are no public or private marinas, protected coves, inlets, or harbors within or near the proposed pipeline landfall.

The offshore pipeline would cross one active and two inactive cables. Transco developed a preliminary installation plan for these crossings. We are recommending in Section 4.8.4.3 that prior to the end of the draft EIS comment period, Transco should file an updated plan showing the finalized pipeline crossings.

Construction of the Rockaway Project would impact the visual character of the Rockaway Peninsula during the estimated 4 months it would take to build the offshore pipeline and complete the HDD operation. The barges and support vessels used in trenching and pipe lay operations would be visible from the shore for a majority of this time, but the visual impact would be mitigated by the distance of the vessels from the beach, which would range from 3,000 feet to more than 2.5 miles. Offshore construction vessels would be visible from residential neighborhoods, but the HDD exit point is located more than a mile from the closest residences and, at this distance, the vessels would appear small. The onshore construction activities at the HDD entry site would be visible from residential neighborhoods, some roadways, and from Jacob Riis Park and Fort Tilden. Transco would minimize the visual impact of these activities by erecting a tent and/or screens to shield the HDD equipment from view. There would be no significant long term visual impacts during operation of the pipeline.

The USACE has advised Transco that it would require a sign no smaller than 4-feet by 4-feet containing language regarding the location of the pipeline at the shoreline crossing as a condition to any permit it may issue for the Rockaway Project. Transco would work with the USACE and NPS to confirm the requirements for the sign and select a design, size, and location that is acceptable to both agencies.

The hangar complex at Floyd Bennett Field that would house the M&R facility is currently in disrepair and has experienced significant structural damage. As part of the Rockaway Project, the hangars would be rehabilitated to accommodate the M&R facility. Transco is proposing a rehabilitated exterior appearance that would restore the hangars' appearance and enhance the visual character of the Floyd Bennett Field Historic District in accordance with a design that would be approved by the NPS, FERC, and New York SHPO. As such, no significant adverse impacts on visual resources are anticipated due to construction or operation of the M&R facility.

5.1.9 Socioeconomics

Construction of the Projects would not have a significant impact on local populations, employment, housing, or the provision of community services. The primary demand on local services would be in the event of an emergency such as a gas leak or fire. Transco has existing emergency response procedures in place that comply with the DOT's regulations in Title 49 CFR Part 192. Transco would meet regularly with local emergency response officials to share emergency response plans, pipeline location information, and background information on natural gas pipeline operations.

Construction activities associated with the Projects, particularly the Rockaway Project, could result in short-term impacts on transportation infrastructure, primarily due to increased traffic flows associated with movement of construction vehicles, personnel, and equipment, and from potential damage to local roadways due to traffic by heavy construction equipment. Traffic on the Rockaway Peninsula or in Brooklyn could be temporarily interrupted when necessary for construction equipment and materials to cross roadways, but these interruptions would likely last 5 to 10 minutes and would be managed in accordance with applicable NYSDOT and local New York City requirements. Transco would acquire permits for loads exceeding 80,000 pounds, as necessary, and would adhere to applicable New York City and New York State regulations regarding traffic, weight, and truck restrictions. Any road surfaces that are damaged would be repaired to pre-existing or better condition. As such, we do not expect construction of the Rockaway Project to have a major impact on road traffic or use. Transportation impacts associated with the Northeast Connector Project would be minor.

The nearshore waters of the New York Bight produce significant quantities of commercially and recreationally important fish and shellfish. Offshore construction activities for the Rockaway Project could temporarily impact commercial and recreational fishing in the New York Bight. Most of the impact would be short term and associated with temporary increases in turbidity and sedimentation. As indicated above, Transco intends to coordinate with commercial and recreational fisherman prior to construction. Following construction, all recreational and commercial fishing areas would be restored with no restrictions. Therefore, operation of the pipeline would not have any permanent economic impact on the fisheries in the area.

There is no evidence that the proposed Projects would result in disproportionately high and adverse human health or environmental effects to minority or low-income communities.

5.1.10 Cultural Resources

For the Rockaway Project, Transco conducted a marine archaeological assessment for the offshore segment of the pipeline, terrestrial archaeological assessments for the onshore segment of the pipeline and M&R facility, and a historic structures assessment for the hangar complex at Floyd Bennett Field. No surveys or assessments were conducted at Compressor Station 195. Construction activities occurring within the fence line at this site are covered by an agreement between Transco and the Pennsylvania SHPO, which exempts modifications of existing Transco facilities from further review for impacts on historic properties. Construction activities that would occur outside of the fence line would be limited to previously disturbed areas within the station yard, but they are not covered by Transco's agreement. Transco is consulting with the Pennsylvania SHPO to determine if surveys are necessary outside the fenceline at Compressor Station 195.

Transco's marine archaeological assessment of the offshore construction areas for the pipeline identified a paleochannel that may indicate the presence of intact sediments or landforms with the potential to contain significant buried cultural resource sites. The paleochannel is located 6 to 18 feet below the seafloor in an area where no trenching would occur; therefore, the channel would not be affected by construction of the pipeline. The surveys additionally identified two magnetic anomaly clusters and associated sonar targets identified as potential cultural resource sites, possibly shipwrecks. Avoidance of these anomalies plus 164-foot buffer zones was recommended. No other cultural resource sites were identified in the offshore construction areas. The New York SHPO reviewed and concurred with the results and recommendations of Transco's marine archaeological surveys. We also concur.

Transco filed a plan for avoiding the magnetic anomaly clusters and buffer zones during construction. These areas would be marked with buoys and identified on navigation charts used by construction vessels. The vessels would avoid anchoring in these areas. Additionally, onboard Transco

representatives would monitor vessel movements to ensure that vessels, anchors, and anchoring cables do not cross the avoidance areas for each magnetic anomaly cluster. To date, we have not received comments from the New York SHPO on Transco's avoidance plan.

The route for the offshore pipeline segment crosses two inactive subsea cables that are greater than 50 years in age. We determined, in consultation with the New York SHPO, that these cables are not eligible for listing in the NRHP.

Transco's terrestrial archaeological assessment for the proposed M&R facility found that Hangars 1 and 2 are located in an area of Floyd Bennett Field with a low sensitivity for containing sites. The NPS nonetheless requested that an archaeologist monitor the excavation of test holes and trenches by Transco in and around the hangars to identify subsurface utilities within the complex. Excavation of the test holes and trenches was completed in April 2013, and a monitoring report was submitted to the NPS for review. The monitoring report will be filed with the Commission and submitted to the New York SHPO after Transco receives and addresses comments from the NPS.

Transco's terrestrial archaeological assessment for the onshore pipeline concluded that the workspace for the HDD entry site and tie-in to the National Grid pipeline is located in an area with a high sensitivity for containing sites. Additional testing of this area is necessary to determine if construction activities in the workspace would affect archaeological sites. The testing is scheduled to be completed in 2013, after which Transco will file a report of investigations for review by the FERC, NPS, and New York SHPO.

The proposed M&R facility would be constructed within a hangar complex (Hangars 1 and 2) on Floyd Bennett Field, which is listed as a district in the NRHP and in the SRHP. Hangars 1 and 2 are considered contributing elements to the significance of the district. Transco prepared a HSR for Hangars 1 and 2 to serve as a planning tool for the proposed rehabilitation and conversion of the complex. Transco prepared initial schematic drawings for the rehabilitation, which have been reviewed by the NPS and New York SHPO. Transco filed a Schematic Design Submittal and comments from the New York SHPO on the Submittal in July 2013. The New York SHPO commented that the proposed rehabilitation of the hangars appears to meet the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR 68). Transco expects to submit full design and construction documents for the M&R facility to the FERC, NPS, and New York SHPO in 2013. Transco would prepare HABS documentation of the structure after the final HSR and the full design and construction documents are accepted by the agencies and the Section 106 review process is complete.

Transco conducted a study to assess the potential effects of construction and operational vibration on the integrity of the hangar complex. The study found that vibrations resulting from individual pieces of construction equipment would not likely damage the structures, but simultaneous operation of multiple pieces of equipment or equipment operating close to walls could potentially cause damage. The study recommended that the engineering design identify vibration level thresholds for the structure, and that Transco prepare and implement a CPP to protect the integrity of the complex during construction. Therefore, we are recommending in Section 4.11.3 that prior to construction, Transco should file a vibration level threshold and CPP for review and approval by the Director of OEP. Transco's study found that vibrations resulting from the operation of the M&R facility would not affect the integrity of the complex provided a 1-inch buffer between the piping and buildings is maintained.

Transco's proposed workspace on Floyd Bennett Field would abut Hangars 3 and 4, which are located about 140 feet to the northwest of Hangars 1 and 2. These structures, also historic buildings, could potentially be affected by vibrations associated with the operation of construction equipment in the

workspace. Therefore, Hangars 3 and 4 would be included in Transco's CPP to ensure they are protected from vibrations during construction.

A Determination of Effect for reuse and rehabilitation of Hangars 1 and 2 for the Rockaway Project will be completed after the final design and construction documents and the CPP are reviewed and approved by the FERC, NPS, and New York SHPO. The Determination of Effect will include an assessment of the proposed design relative to the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR 68), and in particular, the *Standards for Rehabilitation*.

Transco indicated in an August 2013 filing that the CPP would be developed as part of the construction bid process and contractor selection for rehabilitation and meter station construction at the hangars. Thus, the CPP would not be filed for review and approval until and unless the Commission authorizes the Rockaway Project. We will not be able to make a Determination of Effect until all necessary reports and studies have been filed and consultation is complete. In that case, the Commission would negotiate a Programmatic Agreement with the ACHP in accordance with the regulations at 36 CFR 1800.14(b)(1)(ii).

Transco prepared an Unanticipated Discovery Plan for the Rockaway Project to provide guidelines in the event that cultural resources or human remains are discovered during the course of construction. The FERC provided a copy of this plan to the NPS for review. Transco additionally prepared Unanticipated Discovery Plans for the Northeast Connector Project for construction activities in New Jersey (Compressor Stations 205 and 207) and Pennsylvania (Compressor Station 195). We find these plans to be acceptable.

Between December 2011 and April 2013, Transco and/or the Commission requested comments on the Projects from four federally recognized tribes. In a reply letter to the FERC dated March 4, 2013, the Delaware Nation expressed an interest in the Rockaway Project and requested copies of the cultural resources survey reports prepared by Transco. On March 8, 2013, Transco sent copies of the reports to the Delaware Nation. To date, none of the other tribes have commented on or expressed an interest in the Rockaway Project, and none of these tribes have commented on the Northeast Connector Project.

To ensure that our responsibilities under Section 106 of the NHPA are met, we are recommending in Section 4.10.4 that Transco not begin construction until all outstanding survey and evaluation reports, design and construction drawings for Hangars 1 and 2, the CPP, and any necessary treatment plans, have been reviewed by the appropriate parties, and we provide written notification to proceed.

5.1.11 Air Quality and Noise

Air Quality

The use of onshore diesel- and gas-powered equipment during construction of the Projects would result in emissions of some pollutants. These emissions would be temporary and would not result in a significant impact on regional air quality. Construction activities would produce fugitive dust due to land clearing and ground excavations, but the fugitive dust would cease when construction is completed.

The majority of new emissions associated with the Projects would result from the operation of four natural gas-fired heating units and an emergency generator at the proposed M&R facility. While no new compressor facilities would be required, modifications/upgrades would be made at Compressor Stations 195, 205, and 207. At Compressor Station 195, Transco proposes to replace three existing gas-fired reciprocating engines with two new electric motor drives, which would result in a decrease in

operating emissions at this site. The uprates at Compressor Stations 205 and 207 would not result in an increase in operating emissions at these sites.

Emissions produced as a result of operation and maintenance of the Projects are unlikely to contribute to or cause a violation of any AAQS or result in a significant impact on regional air quality. Additionally, operational emissions are governed by SIP-approved programs both in New York and Pennsylvania; thus, a determination has already been made that the permitting programs when applied to stationary sources would not contribute to a violation of NAAQS or delay the attainment or maintenance of standards.

Noise

The noise level at the shoreline due to offshore pipeline construction is estimated to be 51 dBA, which would be less than the typical ambient noise level in the vicinity of the shore. Noise from offshore construction activities may have an effect on aquatic organisms as discussed above, but is unlikely to be noticeable from the shore.

Noise would be generated by equipment operating at the HDD entry site on the Rockaway Peninsula. Without noise mitigation measures, construction activities at this site would produce a significant increase in noise over ambient levels. Transco identified a number of measures that could be implemented to reduce noise, but final mitigation measures have not been selected. Therefore, we are recommending in Section 4.11.2.3, that prior to construction, Transco should file a noise mitigation plan for construction activities at the HDD entry site for review and approval by the Director of OEP. Additionally, Transco would obtain an after-hours work authorization from New York City for drilling operations.

The estimated increase in noise due to construction activities at four of the five nearest NSAs to the M&R facility would be 2.1 dBA, which is unlikely to be detectable to the human ear. The estimated increase in noise at the Floyd Bennett Gateway Park Community Garden (NSA no. 3) would be 14 dBA and would be noticeable. This noise level would occur during peak construction periods and would be lower the rest of the time.

Transco's noise analysis indicates that the noise level at each NSA due to construction activities at Compressor Station 195 would be equal to or less than 55 dBA. The planned modifications at Compressor Stations 205 and 207 would not result in any construction-related noise at these sites.

Operation of the Rockaway Delivery Lateral is not expected to generate significant noise levels because no new natural gas compressor stations would be required for the pipeline. Noise attributable to operation of the M&R facility should be significantly lower than a L_{dn} of 55 dBA at any nearby NSA, and the change in the noise level would likely be undetectable to the human ear.

Existing ambient noise levels at NSAs in the vicinity of Compressor Station 195 are expected to decrease as a result of the proposed modifications at the site, which include a number of mitigation measures to reduce noise. Based on information filed by Transco under Docket No. CP12-463-000, current noise levels at Compressor Station 205 due to station operations currently exceed the FERC sound requirement of 55 dBA at a nearby NSA, but Transco has committed to implementing additional mitigation measures to reduce the noise level at the station. For the Northeast Connector Project, noise levels at nearby NSAs would increase slightly as a result of the proposed uprate of the existing electric motor drives at Compressor Station 205. Our analysis indicates that the sound level attributable to operations at Compressor Station 207 following the uprates would be less than the FERC sound requirement of 55 dBA at nearby NSAs.

To ensure that noise due to operations is consistent with existing ambient conditions and/or does not exceed our standards at Compressor Stations 195, 205, and 207, we are recommending in Section 4.11.2.3 that Transco provide noise surveys for each site to document noise levels at full load conditions. If the noise levels due to full load operations at the stations exceed these levels, Transco would be required to identify and implement additional mitigation measures to meet the appropriate standard.

As discussed above, Transco assessed the potential of vibration from construction activities to cause damage to the hangar complex on Floyd Bennett Field. Based on the results of the study, we are recommending in Section 4.11.3 that prior to construction, Transco identify and file a vibration level threshold and CPP for the hangars for review and approval by the Director of OEP.

Operation of the proposed M&R facility would result in vibration levels below the human limit of perception and would not be felt by other users of Floyd Bennett Field. Vibrations on the pipeline during operations would not affect the integrity of the hangar provided that a minimum buffer of 1 inch is maintained between the inlet and outlet pipes and the hangars where the pipes enter and exit the structures. Vibration levels at Compressor Station 195 would decrease as a result of the proposed modifications at the site. No change in vibration levels are expected as a result of the proposed upgrades at Compressor Stations 205 and 207.

5.1.12 Reliability and Safety

The pipeline and aboveground facilities associated with the Projects would be designed, constructed, operated, and maintained in accordance with or to exceed the DOT Minimum Federal Safety Standards in 49 CFR Part 192. The DOT regulations require that the pipeline be designed, at a minimum, to the appropriate Class location standard and that the spacing between mainline valves meets DOT requirements. Transco proposed a more robust design for the Rockaway Delivery Lateral than is required by the regulations, committing to design the entire pipeline to Class 4 standards. Additionally, with the exception of the HDD segment of the pipeline, which would be deeper, Transco would bury the offshore pipeline at a depth of 4 feet below grade. Onshore, from the HDD entry point to the tie-in with National Grid, Transco would bury the pipeline at a depth of 3 feet below grade, would cover the pipeline with a concrete slab, and would backfill the remainder of the trench. Transco additionally would monitor pipeline pressures 24 hours per day.

Transco has developed a comprehensive Integrity Management Plan for their existing facilities that meets all applicable regulations. Transco would modify the existing Integrity Management Plan, as necessary, to incorporate the proposed facilities for the Projects. Transco also has a Pipeline Safety Monitoring Program in place that would ensure that the Rockaway Delivery Lateral is properly constructed. Transco is in full compliance with all existing regulations and guidelines from the DHS's TSA.

Transco's implementation of the above measures would help to protect public safety and the integrity of the proposed facilities such that the Projects would represent a slight increase in risk to the nearby public.

5.1.13 Cumulative Effects

Cumulative impacts represent the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions. Actions that potentially could impact resources also affected by the Projects include non-jurisdictional facilities, other energy projects, dredging and beach nourishment projects, post-Hurricane Sandy recovery projects, and private projects.

Transco designed the Projects to avoid or minimize impacts on the environment, and we have included recommendations in this draft EIS to further reduce impacts. Each of the other projects considered in our cumulative impacts analysis similarly have been designed to avoid or minimize impacts on sensitive environmental resources. Additionally, it is expected that any significant impacts on sensitive resources resulting from these other projects would be mitigated. Mitigation generally leads to avoidance or minimization of cumulative impacts. Consequently, we anticipate a small incremental cumulative effect after the impacts of the Projects are added to those of other past, present, or reasonably foreseeable actions.

We received numerous comments during scoping for the Projects and in comments accompanying requests to intervene about cumulative impacts associated with development of natural gas reserves (including hydraulic fracturing) in the Marcellus Shale. Activities associated with the Projects would occur outside of the Marcellus Shale region. As a result, the local resources that may be affected by Marcellus Shale development would not be affected by the Projects, and local resources affected by the Projects would not be affected by development in the Marcellus Shale. As such, the effects of activities in the Marcellus Shale region are beyond the scope of the cumulative impacts analysis described below.

5.1.14 Alternatives Considered

We evaluated the No Action Alternative, energy alternatives, system alternatives, route alternatives for the proposed pipeline, site alternatives for the M&R facility, and alternatives to the Northeast Connector Project.

The No Action Alternative would eliminate or delay the short and long-term environmental impacts identified in this draft EIS, but the objectives of the Projects would not be met. Transco would not be able to provide 647 Mdth/d of natural gas to National Grid at a new delivery point on the Rockaway Peninsula. We evaluated the use of alternative energy sources and the potential effects of energy conservation, but these measures similarly would not satisfy the objectives of the proposed Projects.

Our analysis of system alternatives included an evaluation of existing natural gas pipeline systems that currently or eventually would serve the markets targeted by the Projects. In addition to an evaluation of these systems, we also evaluated whether the proposed Constitution Pipeline could meet the Projects' objectives while providing an environmental advantage over the Projects. None of the existing or proposed natural gas pipelines provide a new connection with National Grid's system on the Rockaway Peninsula in Queens County, New York. To create a new connection on the Rockaway Peninsula, these systems would need to be modified by constructing between 10 and 40 miles of new pipeline, which would result in greater environmental impacts than the Projects. For these reasons, none of the existing or proposed pipelines provide an environmental advantage over the Projects

In addition to pipeline systems, we also evaluated five previously or currently proposed LNG terminals, including the Port Ambrose LNG Project, as system alternatives. None of these projects have been completely reviewed or approved for construction, and it would likely be years before they could be permitted and constructed, if at all. Consequently, it is unlikely that these LNG projects could meet National Grid's objectives within a timeframe reasonably close to the Projects. Additionally, because of the longer length of offshore and onshore pipelines to connect the LNG facilities to existing transportation systems, each of the LNG projects would have greater marine and terrestrial impacts than the Projects. We also note that none of the LNG terminal projects would provide a new connection with National Grid's system on the Rockaway Peninsula, which is a key objective of the Projects. For all these reasons,

we do not consider the previously or currently proposed LNG terminal facilities to be reasonable, practicable, or environmentally preferable to the Projects.

We evaluated alternatives on Transco's system, including increasing supplies through its existing Long Beach facilities or delivering gas through its approved Northeast Supply Link Expansion Project and proposed LSE Project. None of these alternatives would meet the objectives of the Projects.

We evaluated four route alternatives to Transco's proposed route for the Rockaway Delivery Lateral, five alternative sites for the M&R facility, and alternative compressor station sites or a pipeline loop for the Northeast Connector Project. Because none of these alternatives would offer significant environmental advantages over the Projects, we eliminated them from further consideration.

We evaluated construction alternatives for the Rockaway Project to determine whether offshore environmental impacts could be reduced or mitigated by use of alternative methods. We did not identify any alternative construction methods that would be feasible or preferable to use of the post-lay jet sled for offshore trenching, the HDD crossing at the shoreline, or Transco's proposal to allow drilling fluid and cuttings to remain in the HDD exit pit. In addition, we found that the use of the proposed lay barge equipment would be preferable to the use of a dynamically positioned lay barge.

In summary, we have determined that the Projects, as modified by our recommended mitigation measures, are the preferred alternative.

5.2 FERC STAFF'S RECOMMENDED MITIGATION

If the Commission authorizes the Projects, we recommend that the following measures be included as specific conditions in the Commission's Order. We believe that these measures would further mitigate the environmental impacts associated with construction and operation of the Projects.

1. Transco shall follow the construction procedures and mitigation measures described in its applications and supplemental filings for the Projects (including responses to staff information and data requests), and as identified in the EIS, unless modified by the Commission's Order. Transco must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
    b. justify each modification relative to site-specific conditions;
    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
    d. receive approval in writing from the Director of OEP **before using that modification**.

2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Projects. This authority shall allow:

    a. the modification of conditions of the Commission's Order; and
    b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as avoidance or mitigation of adverse environmental impacts resulting from construction and operation of the Projects.

3. **Prior to any construction**, Transco shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities for the Projects.

4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Transco shall file with the Secretary any revised detailed survey alignment maps/sheets for the Projects at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

   Transco's exercise of eminent domain authority granted under NGA Section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Transco's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Transco shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas for the Projects that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area.**

   This requirement does not apply to extra workspace allowed by Transco's Plan for the Rockaway Project, the FERC Plan for the Northeast Connector Project, and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

   Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

   a. implementation of cultural resources mitigation measures;
   b. implementation of endangered, threatened, or special concern species mitigation measures;
   c. recommendations by state regulatory authorities; and
   d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of the Certificate and before construction begins**, Transco shall file Implementation Plans for the Projects for review and written approval by the Director of OEP. Transco must file revisions to the plans as schedules change. The plans shall identify:

    a. how Transco will implement the construction procedures and mitigation measures described in its applications and supplements (including responses to staff data requests), identified in the EIS, and required by the Order;
    b. how Transco will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
    c. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
    d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
    e. the location and dates of the environmental compliance training and instructions Transco will give to all personnel involved with construction and restoration (initial and refresher training as the Projects progress and personnel change), with the opportunity for OEP staff to participate in the training session(s);
    f. the company personnel (if known) and specific portion of Transco's organization having responsibility for compliance;
    g. the procedures (including use of contract penalties) Transco will follow if noncompliance occurs; and
    h. for each discrete facility, a Gantt or Project Evaluation and Review Technique chart (or similar project scheduling diagram), and dates for:

        i. the completion of all required surveys and reports;
        ii. the environmental compliance training of onsite personnel;
        iii. the start of construction; and
        iv. the start and completion of restoration.

7. Transco shall employ at least one EI for the Rockaway Project and one EI for the Northeast Connector Project. The EIs shall be:

    a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
    b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
    c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
    d. a full-time position, separate from all other activity inspectors;
    e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
    f. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plans, Transco shall file updated status reports with the Secretary **on a weekly basis for the Rockaway Project and a monthly basis for the Northeast Connector Project until all construction and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

    a. an update on Transco's efforts to obtain the necessary federal authorizations;
    b. the construction status of the Projects, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
    c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
    d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
    e. the effectiveness of all corrective actions implemented;
    f. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
    g. copies of any correspondence received by Transco from other federal, state, or local permitting agencies concerning instances of noncompliance, and Transco's response.

9. **Prior to receiving written authorization from the Director of OEP to commence construction of any facilities for the Projects**, Transco shall file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

10. Transco must receive written authorization from the Director of OEP **before placing the Projects into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Projects are proceeding satisfactorily.

11. **Within 30 days of placing the authorized facilities for the Projects in service**, Transco shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
    b. identifying which of the Certificate conditions Transco has complied with or will comply with. This statement shall also identify any areas affected by the Projects where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

12. **Prior to the end of the draft EIS comment period**, Transco shall have an experienced HDD engineer evaluate subsurface conditions along the HDD route to confirm the feasibility of Transco's proposed HDD crossing methodology for the Rockaway Delivery Lateral and file the results with the Secretary. ***(Section 4.1.7)***

13. **Prior to construction of the Rockaway Project**, Transco shall consult with NYCDEP staff to identify and address agency concerns regarding flow rates for withdrawals of municipal water from fire hydrants and file with the Secretary documentation of the consultation. ***(Section 4.3.2.3)***

14. **Prior to construction of the Rockaway Project**, Transco shall update its SPCC Plan to include specific measures that would be implemented to identify, control, and clean up any accidental leaks or spills from offshore construction vessels. This information shall be filed with the Secretary for review and approval of the Director of OEP. ***(Section 4.3.2.3)***

15. Transco shall not begin offshore construction activities for the Rockaway Project **until**:

    a. the FERC staff receives comments from NOAA Fisheries, Protected Resources Division regarding impacts on marine mammals and Transco's proposed mitigation measures;
    b. NOAA Fisheries issues an IHA to Transco; and
    c. the Director of OEP approves Transco's plans and notifies Transco in writing that the mitigation measures may be implemented and construction may proceed. ***(Section 4.5.2.2)***

16. **Prior to the end of the draft EIS comment period**, Transco shall file a revised sediment modeling analysis for the Rockaway Project to estimate water quality impacts associated with operation of the suction dredge. The modeling shall also consider the effect of redirecting discharge nozzles to expel sediments back into the trench and any other design modifications. ***(Section 4.6.3.2)***

17. **Prior to the end of the draft EIS comment period**, Transco shall file an assessment identifying the specific additives that would be used in the HDD drilling fluid for the Rockaway Project, the material safety data sheets for each additive, the concentration and dilution rates for each additive, an evaluation of the toxicity of each additive, and an evaluation of the potential for bioaccumulation of each additive in the food chain. ***(Section 4.6.3.2)***

18. **Prior to construction of the Rockaway Project**, Transco shall consult with the NPS to identify a protocol for coordinated monitoring of the drill path in the GNRA between the months of March and September for the presence of sensitive species, and file documentation of the consultation with the Secretary. ***(Section 4.7.1.6)***

19. Transco shall not begin construction activities for the Rockaway Project **until**:

    a. the FERC staff receives comments from NOAA Fisheries, Protected Resources Division and the FWS regarding impacts on federally listed species;
    b. the FERC staff completes formal consultation with NOAA Fisheries/FWS, if required; and
    c. the Director of OEP approves Transco's plans and notifies Transco in writing that the mitigation measures may be implemented and construction may proceed. ***(Section 4.7.4)***

20. **Prior to construction**, Transco should file with the Secretary the NYSDOS determination of the Rockaway Project's consistency with the New York State CMP under the applicable provisions of the CZMA. ***(Section 4.8.3)***

21. **Prior to the end of the draft EIS comment period**, Transco shall file with the Secretary an updated cable crossing plan for the Rockaway Project that shows the finalized pipeline crossing and addresses the cable owner's concerns. Transco shall also file evidence of the cable owner's concurrence with the plan. ***(Section 4.8.4.3)***

22. Transco shall not begin implementation of any treatment plans/measures (including archaeological data recovery); construction of facilities; or use of staging, storage, or temporary work areas, and new or to-be-improved access roads for the Projects **until**:

    a. Transco files all outstanding survey and evaluation reports, the final HSR, design and construction drawings for Hangars 1 and 2, the CPP, any necessary treatment plans, and comments from the NPS and the New York SHPO on all reports and plans for the Rockaway Project;
    b. Transco files documentation from the Pennsylvania SHPO that an archaeological survey at Compressor Station 195 is not required, or conducts a survey and files a survey report and the comments of the Pennsylvania SHPO on the report:
    c. the ACHP is afforded an opportunity to comment if historic properties would be adversely affected or a Programmatic Agreement has been executed; and
    d. the FERC staff reviews and the Director of OEP approves all cultural resource reports and plans, and notifies Transco in writing that the treatment plans/mitigation measures may be implemented and/or that construction may proceed.

    All material filed with the Commission that contains location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE.**" ***(Section 4.10.4)***

23. **Prior to construction of the Rockaway Project**, Transco shall file with the Secretary a site-specific noise mitigation plan for the HDD onshore entry location for review and approval by the Director of OEP that incorporates the noise mitigation measures recommended in Report No. 2825 by Hoover and Keith, Inc.; identifies any deviations from these recommendations with stated justification; and specifies any additional or alternate mitigation that would be employed. ***(Section 4.11.3.2)***

24. Transco shall file a noise survey with the Secretary **no later than 60 days** after placing the modified Compressor Station 195 in service for the Northeast Connector Project. If a full load condition noise survey is not possible, Transco shall provide an interim survey at the maximum possible hp load and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at Compressor Station 195 under interim or full hp load conditions exceeds existing noise levels at NSA no. 1 or an L_{dn} of 55 dBA at NSA nos. 2 and 3, Transco shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Transco shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. ***(Section 4.11.2.3)***

25. Transco shall file a noise survey with the Secretary **no later than 60 days** after placing the modified Compressor Station 205 in service for the Northeast Connector Project. If a full load condition noise survey is not possible, Transco shall provide an interim survey at the maximum possible hp load and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at Compressor Station 205 under interim or full hp load conditions exceeds an L_{dn} of 55 dBA at any nearby NSAs, Transco shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Transco shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. ***(Section 4.11.2.3)***

26. Transco shall make all reasonable efforts to ensure its predicted noise levels from Compressor Station 207 are not exceeded at nearby NSAs and file noise surveys showing this with the Secretary **no later than 60 days** after placing the modified Compressor Station 207 in service for the Northeast Connector Project. If a full load condition noise survey is not possible, Transco shall provide an interim survey at the maximum possible hp load and provide the full load survey within 6 months. If the noise attributable to the operation of Compressor Station 207 at interim or full hp load exceeds an L_{dn} of 55 dBA at any nearby NSAs, Transco shall file a report on what changes are needed and shall install additional noise controls to meet the level **within 1 year** of the in-service date. Transco shall confirm compliance with this requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. ***(Section 4.11.2.3)***

27. **Prior to construction of the Rockaway Project**, Transco shall file with the Secretary a vibration level threshold and CPP for review and approval by the Director of OEP. ***(Section 4.11.3)***